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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,104	03/16/2004	Robert J. Crist	02-10	3215

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DAYCO PRODUCTS, LLC
1 PRESTIGE PLACE
MIAMISBURG, OH 45342

EXAMINER	
LUONG, VINH	

ART UNIT	PAPER NUMBER
3682	

DATE MAILED: 08/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/802,104	CRIST, ROBERT J.	
	Examiner	Art Unit	
	Vinh T. Luong	3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) *10 and 12-23* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 March 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Vinh T. Luong
Primary Examiner

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. Applicant's election without traverse of Group I and the species of Figs. 1-6 in the reply filed on August 4, 2006 is acknowledged.

2. Claims 10 and 12-23 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention and/or species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on August 4, 2006.

3. The drawings are objected to because the drawings do not comply with 37 CFR 1.84. For example:

(a) The sectional line, such as, S-S in Fig. 2 should have been changed to line 3-3 in order to correspond to Fig. 3. See 37 CFR 1.84(h)(3); and

(b) The drawings are inconsistent with the specification and the claims. The specification describes and claims 2-7 claim the fibers 46, however, the details C and D in Figs. 6 show that the elements 46 are refractory material, not fibers in accordance with the drawing symbols for draftsperson in MPEP 608.02.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the

renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The listing of references in the specification (e.g., US Patent No. 2,972,904) is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

5. The use of the trademarks, such as, VAMAC and TECHNORA has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology. Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

6. The disclosure is objected to because of the following informalities, e.g., listed below:

(a) In the Brief Description of the Drawings, the sectional line, such as, S-S in Fig. 2 should have been changed to line 3-3 in order to correspond to Fig. 3. See 37 CFR 1.84(h)(3); and

(b) The drawings are inconsistent with the specification and the claims. The specification describes and claims 2-7 claim the fibers 46, however, the details C and D in Figs.

6 show that the elements 46 are refractory material, not fibers in accordance with the drawing symbols for draftsperson in MPEP 608.02.

Appropriate correction is required.

7. Claim 7 is to because of the following informalities: the claim contains typographical or grammatical error. For example, the recitation "if rotation" should have been changed to - - of rotation - -. Appropriate correction is required.

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 2, 8, 9, and 11 are anticipated 102(b) by Haga et al. (US Patent No. 6,345,430 B1).

Regarding claim 1, Haga teaches a vibration damper for damping torsional and bending vibrations in a rotating shaft (a crank shaft. *Ibid.* col. 3, line 24-33) having an axis of rotation (unnumbered in the figure), the vibration damper comprising:

a hub 1 adapted to be coupled to the shaft for rotational movement therewith;

an inertia element 2 concentric with the hub 1; and

an elastic element 4 adapted to non-rigidly couple the hub 1 and the inertia element 2;

wherein the elastic element 4 inherently possesses a first shear modulus in a first direction and a second shear modulus in a second direction and wherein the first shear modulus and the second shear modulus are different.

On the one hand, Haga's elastic element 4 inherently possesses different first and second shear modulus in different directions, such as, axial and radial directions. In fact, the shear modulus is defined as the ratio of shear stress to the shear strain, meanwhile, the shear stress is defined as the ratio of force to the area. Since the area of Haga's elastic element 4 is varied in the axial and radial directions as seen in the drawings, therefore, the shear stress of Haga's elastic element is varied therewith. Consequently, the shear modulus of Haga's elastic element 4 is varied or different in the axial and radial directions. On the other hand, note that the "whereby" or "wherein" clause that merely states the inherent result of the limitations set forth in the claim adds nothing to the patentability or substance of the claim. *Texas Instrument Inc. v. International Trade Commission*, 26 USPQ2d 1018 (Fed. Cir. 1993); *Griffin v. Bertina*, 62 USPQ2d 1431 (Fed. Cir. 2002); and *Amazon.com Inc. v. Barnesandnoble.com Inc.*, 57 USPQ2d 1747 (Fed. Cir. 2001).

Regarding claim 2, Haga's elastic element 4 comprises a composite material. *Ibid.* col. 3, lines 34-45.

Regarding claim 8, a first surface 6 located on the inertia element 2 is spaced radially outwardly from a second surface 5 located on the hub 1, and the elastic element 4 is located between the first surface 6 and the second surface 5.

Regarding claim 9, an outer surface 2a of the inertia element 2 is adapted to receive a power-transmitting belt. *Ibid.* col. 3, lines 42-45.

Regarding claim 11, an outer surface 1d of the hub 1 is adapted to receive a power-transmitting belt. *Ibid.* col. 3, lines 42-45.

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. Claims 1-9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haga et al. (US Patent No. 6,345,430) in view of Harris' Shock and Vibration Handbook.

Regarding claim 1, Haga teaches a vibration damper for damping torsional and bending vibrations in a rotating shaft (a crank shaft. *Ibid.* col. 3, line 24-33) having an axis of rotation (unnumbered in the figure), the vibration damper comprising:

a hub 1 adapted to be coupled to the shaft for rotational movement therewith;

an inertia element 2 concentric with the hub 1; and

an elastic element 4 adapted to non-rigidly couple the hub 1 and the inertia element 2.

Haga teaches the invention substantially as claimed. However, Haga does not explicitly teach that the material of the elastic element possesses different first and second shear modulus in first and second directions.

Harris' Shock and Vibration Handbook (hereinafter "Harris") teaches the well-known material (see, *e.g.*, Table 35.5 on pages 35.6 and 35.7) that possesses different first and second shear modulus in first and second directions (axial and transverse directions) in order to dampen the shock and vibration. See *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960) and MPEP 2144.07.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to select the well known material that possesses different first and second shear modulus in first and second directions in order to dampen the shock and vibration in Haga's damper as taught or suggest by Harris.

Regarding claim 2, Haga's elastic element 4 comprises a composite material. *Ibid.* col. 3, lines 34-45. In addition, Harris' material is also a composite material. See page 35.6

Regarding claim 3, Harris' composite material comprises an elastomer having a plurality of fibers dispersed therein. See page 35.6.

Regarding claim 4, Harris' fibers are dispersed within the elastomer in a unidirectional orientation. See last paragraph on page 35.6.

Regarding claim 5, Harris's plurality of fibers (carbon/graphite and Kevlar fibers) are dispersed within the elastomer in a longitudinal (axial) orientation with respect to the elastic element. See last paragraph on page 35.6.

Regarding claim 6, Harris' plurality of fibers (carbon/graphite and Kevlar fibers) are dispersed within the elastomer in an axial orientation that is substantially parallel to the axis of rotation. See last paragraph on page 35.6.

Regarding claim 7, Harris' plurality of unidirectional fibers are capable of being dispersed within the elastomer in a radial orientation with respect to the axis of rotation. On the other hand, the orientation of Harris' unidirectional fibers in Haga's damper would have been a matter of choice in design since the claimed structures and the function they perform are the same as the prior art. *In re Chu*, 66 F.3d 292, 36 USPQ2d 1089 (Fed. Cir. 1995) citing *In re Gal*, 980 F.2d 717, 719, 25 USPQ2d 1076, 1078 (Fed. Cir. 1992).

Regarding claim 8, a first surface 6 located on Haga's inertia element 2 is spaced radially outwardly from a second surface 5 located on the hub 1, and the elastic element 4 is located between the first surface 6 and the second surface 5.

Regarding claim 9, an outer surface 2a of Haga's inertia element 2 is adapted to receive a power-transmitting belt. *Ibid.* col. 3, lines 42-45.

Regarding claim 11, an outer surface 1d of Haga's hub 1 is adapted to receive a power-transmitting belt. *Ibid.* col. 3, lines 42-45.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Japanese Utility Model No. 11-230269 (elastic element 4), usima (anisotropy rubber elastic element 72), and Kana (elastic element 3).

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vinh T. Luong whose telephone number is 571-272-7109. The examiner can normally be reached on Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Luong

August 28, 2006

Vinh T. Luong
Primary Examiner